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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,165	09/10/2003	Hisayuki Yazawa	9281-4636	7390

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EXAMINER
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WATKO, JULIE ANNE

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/660,165

Applicant(s)

YAZAWA ET AL.

Examiner

Julie Anne Watko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 12 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/10/2003, 2/2/2004</u> .   | 6) <input checked="" type="checkbox"/> Other: <u>IDS 09/12/2005</u> .       |

### DETAILED ACTION

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
2. Applicant cannot rely upon the foreign priority papers to overcome any rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### *Specification*

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The product by process limitations in these claims (“formed by plating”) are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3).

See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal

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with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

6. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawasaki et al (US PAP No. 2002/0008936 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

As recited in claim 1, Kawasaki et al show soft magnetic film comprising an alloy which is represented by the formula FeNiRe (see ¶ 0013, “a soft magnetic film comprising a FeNi alloy containing at least one element  $\alpha$  selected from Tc, Ru, Rh, Pd, Re, Os, Ir and Pt”).

The disclosed range of mass percentages overlaps the claimed range of mass percentages (see ¶ 0013 and 0015, “wherein the composition ratio of the element  $\alpha$  is 1% by mass to 10% by mass”, “Fe composition ratio of 55% by mass to 90% by mass, 72% by mass or more, or 68% by mass or more”).

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7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Dykes et al (US Pat. No. 6586069 B2).

As recited in claim 1, Dykes et al show a soft magnetic film comprising an alloy which is represented by the formula FeNiRe ("NiFeRe", see col. 5, line 34).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. The product by process limitations in these claims ("formed by plating") are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product

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“gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

11. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dykes et al (US Pat. No. 6586069 B2).

Dykes et al show a film as described above for claim 1.

Dykes et al are silent regarding the numerical ranges specifically recited in claims 2-7.

It is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization/ experimentation and thereby obtain various optimized relationships including those set forth in claims 2-7.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the magnetic head of Dykes et al satisfy the relationships set forth in claims 2-7. The rationale is as follows: one of ordinary skill in the art would have been motivated to have had the magnetic head of Dykes et al satisfy the relationships set forth in claims 2-7 since it is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization /experimentation and thereby obtain various optimized relationships including those set forth in claims 2-7. Moreover, absent a showing of criticality (i.e., unobvious or unexpected results), the relationships set forth in claims 2-7 are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed ranges. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

12. Claims 8-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huai et al (US Pat. No. 6118629) in view of Dykes et al (US Pat. No. 6586069 B2).

As recited in claim 8, Huai et al show a thin film magnetic head (see Fig. 5) comprising: a lower core 22 layer composed of a magnetic material, an upper core layer 28 formed above the lower core layer with a magnetic gap 42 provided therebetween, and a coil layer (32B, for example) applying a recording magnetic field ("inductive", see col. 4, line 13) to the two core layers, wherein at least one of the two core layers is (inherently) composed of a soft magnetic film.

As recited in claims 8 and 10, Huai et al are silent regarding an alloy which is represented by the formula FeNiRe.

As recited in claims 8 and 10, Dykes et al show an alloy which is represented by the formula FeNiRe ("NiFeRe", see col. 5, line 34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use FeNiRe as the soft magnetic film of the upper and lower cores. The rationale is as follows: one of ordinary skill in the art would have been motivated to use FeNiRe as the soft magnetic film of the cores in order to satisfy specific use and performance parameters by selection of a ferromagnetic material suitable for a magnetic head as taught by Dykes et al (see col. 5, lines 30-34, "The selection of a magnetic material also depends on the specific use and performance parameters. For magnetic heads, suitable ferromagnetic materials include, for example, Ni, Co, NiFe, CoFe, CoZrNb, NiFeCr, AlSiFe, NiFeRe, combinations thereof and alloys thereof.").

As recited in claim 9, Huai et al show a bulged lower magnetic pole layer 26 formed on the lower core layer at a face 70 opposing a recording medium.

As recited in claim 11, Huai et al show a magnetic pole portion (including 30 and 26) which is disposed between the lower core layer and the upper core layer, the width of the magnetic pole portion in a track width direction being set to smaller (see Fig. 4) than that of each of the lower core layer and the upper core layer, wherein the magnetic pole portion is composed of a lower magnetic pole layer 26 in contact with the lower core layer 22, an upper magnetic pole layer 30 in contact with the upper core layer 28, and a gap layer 42 located between the lower magnetic pole layer and the upper magnetic pole layer, or the magnetic pole portion is formed of an upper magnetic pole layer 30 in contact with the upper core layer and a gap layer 42 located between the upper magnetic pole layer and the lower core layer.



As recited in claim 13, Huai et al show a thin film magnetic head (see Fig. 5) comprising: a lower core layer 22, an upper core layer 28, and a magnetic pole portion (including 30 and 26) located between the lower core layer and the upper core layer, the width of the magnetic pole portion in a track width direction being set to smaller (see Fig. 4) than that of each of the lower core layer and the upper core layer, wherein the magnetic pole portion is formed of a lower magnetic pole layer 26 in contact with the lower core layer, an upper magnetic pole layer 30 in contact with the upper core layer, and a gap layer 42 located between the lower magnetic pole layer and the upper magnetic pole layer, or the magnetic pole portion is formed of an upper magnetic pole layer 30 in contact with the upper core layer and a gap layer 42 located between the upper magnetic pole layer and the lower core layer, and at least one of the upper magnetic pole layer and the lower magnetic pole layer is (inherently) composed a soft magnetic film.

As recited in claim 13, Huai et al are silent regarding an alloy which is represented by the formula FeNiRe.

See teachings, rationale and motivations for combining teachings above for claim 8.

#### ***Allowable Subject Matter***

13. Claims 12 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jones ("Fabrication of Film Heads with High Moment Materials", 1998, Acta-Materialia v. 46 no. 11 pp. 3805-12) teaches that "Plated materials have an immediate advantage

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in that almost all film heads currently made use plated  $\text{Ni}_{80}\text{Fe}_{20}$ . In principle the implementation of a new plated material would have only a secondary effect on the total manufacturing process. It is hoped the changeover would require only simple changes in the plating bath chemistry and operating conditions" (see page 3807).

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday-Thursday until 4:45PM, and Friday until 6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko  
Primary Examiner  
Art Unit 2653

November 30, 2005  
JAW

